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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/578,745	NAKANO ET AL.	
	Examiner	Art Unit	
	ROBERT XU	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 04/22/2009 has been entered and fully considered. Claims 5-7 are canceled. Claims 1-4 and 8 are pending, of which Claims 1 is amended, Claim 8 is new.

Response to Amendment

2. In response to amendment, the examiner establishes 112, second paragraph, rejection and modifies rejection over the prior art established in the previous Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 provides for a device that use the gas detecting element of claim1, but, since the claim does not set forth any structures involved in the device, it is unclear what device applicant is intending to encompass. A claim is indefinite where it merely recites a use without any positive delimiting how this device is actually structured.

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title

Claim 8 is rejected under 35 U.S.C. 101 because the claimed recitation of a machine that uses another machine, without setting forth any structures involved in the machine, results in an improper definition of a machine, i.e., results in a claim which is not a proper machine claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. **Claims 1-4 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leiner (US Patent 5,496,521, IDS) in view of Isaacson et al. (US Patent 6,190,327) (Isaacson) and Sullivan et al. (US Patent 6,207,110, IDS) (Sullivan).

In regard to Claim 1, Leiner discloses a gas detecting element comprising:

a hollow container (reaction space 8) (see col. 4, line 2, Figure 1);

an optical density detection device on one side of the container to allow optical density detection (light source 14 and detector 15) (see col. 4, lines 28-29).

a gas–permeable window formed on the opposing side of the container (gas permeable membrane 9) (see col. 4, lines 4-5, Figure 1);

a reagent that exhibits coloration by reaction with a gas to be measured housed in a space between the window and the detection device (indicator layer 10) (see col. 4, line 4, Figure 1).

Leiner does not specifically disclose that the optical density detection device has an optical window. However, it is common and necessary to separate the chemicals from the optical detection device by an optical window that is not gas-permeable. For example, Isaacson discloses optical density detection window that is not gas-permeable for gas detection (see abstract). At time of the invention, it would have been obvious to one of ordinary skill in the art to have an optical window that is not gas-permeable between the reagent and the optical detection device as disclosed by Isaacson in Leiner's device, so that the chemicals will not interact with the detection device.

Leiner does not disclose that a light-reflective surface is formed on the side of the gas-permeable window facing the reagent absorbent material. Sullivan discloses an optical sensor that has liquid permeable metallic coating. The metallic coating is deposited directly and is in physical contact with the sensing membrane. When light from a light source is shone through the substantially light transmissive substrate onto the sensing membrane, the metallic coating reflects back the excitation light as well as fluorescence light generated by the sensor such that substantially no light reaches the

sample outside the chamber where the light may be scattered and/or absorbed by the sample. Accordingly, the accuracy and repeatability of the sensor is improved (see abstract). At the time of the invention, it would have been obvious to one of ordinary skill in the art to use a light-reflective surface formed on the side of the gas-permeable window facing the reagent absorbent material so that the excitation light can be reflected back such that no light reaches the sample outside chamber where the light may be scattered and/or absorbed by the sample, because Sullivan teaches that this would improve the accuracy and repeatability of the sensor.

In regard to Claims 2 and 3, Leiner discloses a light source (14) and an optical density detector (15) that is affixed to a frame (supporting layer 16) that constitutes the container. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have a transparent non-permeable film between the chemical chamber and the optical density detector in order to prevent reaction between chemical and the detector.

In regard to Claim 4, Leiner discloses that reagent absorbent material (indicator layer 10) impregnated with the reagent (indicator substance) (see col. 3, lines 46-48) is housed in the space (reaction space 8) (see Figure 1).

In regard to Claim 8, since Claim 1 is obvious over Leiner in view of Isaacson and Sullivan, it would have been obvious to employ the gas detecting element recited in claim 1 in any undefined gas detecting device.

Response to Arguments

8. Applicant's arguments filed 04/22/2009 have been fully considered but they are not persuasive.

Applicants argue that Leiner does not describe a hollow container having opposing windows. Leiner discloses a gas permeable membrane 9 located on one side of the reaction space and supporting layer 16 on the other side (see Figure 1). The supporting layer 16 separates the reaction space from the light source and photo detector (see figure 1). In order for the light from the light source to pass layer 16 to reach the reaction space and for the light from the reaction space to pass layer 16 to

reach the photo detector, the supporting layer 16 must have the capability of transporting light. Therefore, Leiner discloses a hollow container having opposing windows. If there is any doubt that the supporting layer 16 is light transparent, Leiner in view of Isaacson would confirm that the supporting layer can be light transparent.

Applicants also argue that a rejection based on the assertion that the claimed subject matter – an optical density detection window is "well known in the art" without citing a prior art reference is improper where the facts asserted to be well known are not capable of instant and unquestionable demonstration. Isaacson's disclosure supports examiner's assertion that an optical density detection window is "well known in the art".

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT XU whose telephone number is (571)270-5560. The examiner can normally be reached on Mon-Thur 7:30am-5:00pm, Fri 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5/4/2009

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

RX